

WHAT IS CLAIMED IS:

1. A communication system for controlling optical communication, the system comprising:

5 a sending unit including:

supervisory signal sending control means for controlling the sending of a supervisory signal for having supervisory control of optical communication and a drive supervisory signal for controlling the driving of an optical fiber amplifier for performing optical amplification by using a non-linear optical phenomenon in an optical fiber, and

10 sending stop means for receiving a stop signal and for stopping the sending of the drive supervisory signal; and

15 a receiving unit including:

the optical fiber amplifier,

drive control means for receiving the drive supervisory signal and for controlling the driving of the optical fiber amplifier, and

20 stop signal sending means for sending the stop signal to the sending unit after the optical fiber amplifier being driven.

25 2. The communication system according to claim 1, wherein the supervisory signal sending control means sets the transmission rate of the drive supervisory signal to a

small value and sends the drive supervisory signal so that the drive supervisory signal can be received in a state in which the optical fiber amplifier is not operating.

5           3. The communication system according to claim 2, wherein the supervisory signal sending control means includes a source of the supervisory signal and a source of the drive supervisory signal which are separate from each other and performs the simultaneous or switching  
10 sending of the supervisory signal and the drive supervisory signal the transmission rates of which are different from each other.

          4. The communication system according to claim 2,  
15 wherein the supervisory signal sending control means uses one signal source which can control a transmission rate variably to perform the switching sending of the supervisory signal and the drive supervisory signal the transmission rates of which are different from each other.

20           5. The communication system according to claim 1, wherein the supervisory signal sending control means sets the wavelength of the drive supervisory signal to a value being within the range of an empty band in a transmission  
25 band for a main optical signal and sends the drive supervisory signal.

6. The communication system according to claim 5,  
wherein the supervisory signal sending control means  
includes a source of the supervisory signal and a source  
of the drive supervisory signal which are separate from  
each other and performs the simultaneous or switching  
sending of the supervisory signal and the drive  
supervisory signal the wavelengths of which are different  
from each other.

7. The communication system according to claim 5,  
wherein the supervisory signal sending control means uses  
one signal source which can control a wavelength variably  
to perform the switching sending of the supervisory signal  
and the drive supervisory signal the wavelengths of which  
are different from each other.

8. The communication system according to claim 1,  
wherein the supervisory signal sending control means  
amplifies only the drive supervisory signal and sends the  
drive supervisory signal so that the drive supervisory  
signal can be received in a state in which the optical  
fiber amplifier is not operating.

9. A sending apparatus for controlling sending in  
optical communication, the apparatus comprising:

supervisory signal sending control means for  
controlling the sending of a supervisory signal for having

supervisory control of optical communication and a drive  
supervisory signal for controlling the driving of an  
optical fiber amplifier for performing optical  
amplification by using a non-linear optical phenomenon in  
5 an optical fiber; and

sending stop means for receiving a stop signal and  
for stopping the sending of the drive supervisory signal.

10. A receiving apparatus for controlling receiving  
10 in optical communication, the apparatus comprising:

an optical fiber amplifier for performing optical  
amplification by using a non-linear optical phenomenon in  
an optical fiber;

drive control means for controlling the driving of  
15 the optical fiber amplifier; and

stop signal sending means for sending a stop signal  
to a unit on the sending side after the optical fiber  
amplifier being driven.